NOTE

CHROMOSOME NUMBER IN *NEVIUSIA* (ROSACEAE: KERRIEAE).—Peter Goldblatt, Missouri Botanical Garden, P. O. Box. 299, St. Louis, MO 63166-0299.

In 1992 a new species of the genus *Neviusia* was discovered in northern California, later named *N. cliftonii* Shevock, Ertter & Taylor (Shevock et al. 1992, Novon 2: 285–289). This new addition to the California flora was particularly interesting because it was a second species of a genus that, until then, included just *N. alabamensis* Gray from the southeastern United States. Renewed interest in *Neviusia* prompted this study of the chromosome cytology of the genus, an undertaking suggested by Stebbins (Fremontia 22(3):11–13, 1993). *Neviusia alabamensis* had first been reported as having a diploid chromosome number of $2n=16$ (Sax, Journal of the Arnold Arboretum 12:3–22, 1931), a count later corrected to $2n=18$ (Sax, Journal of the Arnold Arboretum 13:363–367, 1932). A second count for the species, $2n=14$, was made by Taylor & Deramus (Rhodora 66:274, 1964). The count of $2n=18$ was confirmed by Baldwin (Rhodora 53:203–206, 1951).

New chromosome numbers were obtained for both species of *Neviusia* from mitotic metaphase in root tips harvested from actively growing plants. The methods for the counts were the same as described elsewhere in detail (Goldblatt & Takei, Annals of the Missouri Botanical Garden 80:961–973, 1993): tips were pretreated in aqueous m-bromonaphthalene for four hours at room temperature, then hydrolyzed in 10% HCl at 60° for six minutes after which the excised apical meristems were squashed on glass slides in lactopropionic orcein.

Both species proved to be diploid, $2n=18$, thus with a basic chromosome number of $x=9$. Chromosomes are relatively small and similar in size, (ca.) 2 μm long, and submetacentric to metacentric. Owing to their small size chromosomes could not be matched in pairs and I could not distinguish any karyotypic details. Observations here for *N. alabamensis* suggest that the count of $2n=14$ for the species by Thomas & Deramus is erroneous, or at best atypical of the species. Counts for the immediately related genera *Kerria* and *Rhodotypos*, which together with *Neviusia,* comprise the tribe Kerrieae, are also $2n=18$ (Sax, Journal of the Arnold Arboretum, 13:363–367, 1932). It now seems beyond reasonable doubt that $x=9$ is the basic chromosome number for Kerrieae and that all members of the tribe are diploids with $2n=18$.

Although *Neviusia* is traditionally placed in subfamily Rosoideae of the Rosaceae (e.g., Melchior, A. Engler's Syllabus der Pflanzenfamilien, 1964; Robertson, Journal of the Arnold Arboretum 55:344–401, 1974), the basic chromosome number, $x=9$ for the genus and for Kerrieae, at first appears at odds with this treatment. The most

TABLE 1. CHROMOSOME NUMBER AND VOUCHER DATA FOR SPECIES OF *NEVIUSIA* COUNTED.

Species	Diploid number $2n$	Vouchers
N. alabamensis	18	USA, without precise locality, cultivated at the Missouri Botanical Garden, St. Louis, *Dietrich et al. 120* (MO)
N. cliftonii	18	USA, California, Shasta Co., *Taylor & Clifton 12513* (JEPS)

common base number in the subfamily is $x=7$ (e.g., Raven, Annals of the Missouri Botanical Garden 62:724–764, 1975). A base of $x=9$ does, however, characterize at least the tribes Dryadeae as well as Kerriae of the subfamily, as well as the entire subfamily Spiraeoideae (Raven, Annals of the Missouri Botanical Garden 62:724–764, 1975; Goldblatt, 63:200–206, 1976). Although the chromosome number in *Neviusia* thus at first seems discordant in Rosoideae, it is not for Kerrieae. There seems no reson to dispute the subfamilial position of Kerrieae but it seems worth pointing out that although the traditional view is that $x=7$ is basic for Rosoideae, this number is merely the most common chromosomal base in the subfamily. Most likely the ancestral base number for Rosoideae is $x=9$. Dysploid reduction of the chromosome number to $x=8$ and then to 7 most likely occurred early in the differentiation and radiation of the subfamily.

NOTEWORTHY COLLECTIONS

California

Brassica fruticulosa Cyrillo (Brassicaceae).—Los Angeles Co., southern base of the San Gabriel Mtns. in Evey Canyon, just north of San Antonio Dam and Potato Mtn., alt. 700 m, 11 Jun 1993, *Steve Boyd et al. 8190* (RSA); Riverside Co., Box Springs Mountains, E edge of Riverside, Two Trees Canyon, ca. 20 individuals in a large stand of wildflowers on a one year old burn, 5 Apr 1989, *A. C. Sanders & O. F. Clarke 9035* (UCR); San Bernardino Co., Ontario, N side of Holt Blvd. just NE of the Ontario Airport, sandy soil in a waste area, 26 Jan 1992, *A. C. Sanders 12017* (RSA, UCR); Redlands, Santa Ana River Wash, between Orange St. and Church St., 34°06′N, 117°11′W, T1S, R3W, S15, alt. 1200 ft., 18 Jun 1993, *Scott White 1565D* (UCR); San Gabriel Mountains, Cucamonga Creek, T1N R7W S20, alt. 2140 ft., 26 Jan 1994, *Dick Swinney 2705* (RSA, UCR); San Gabriel Mountains, N of 19th St. in Rancho Cucamonga, ca. ½ mi W of Sapphire St., alt. 1624 ft., 26 Jan 1994, *Dick Swinney 2713* (RSA, UCR); Muscoy, Hwy 30 (Highland Ave.) at Cajon Wash, 34°10′N, 117°20′W, alt. 365 m, 2 Dec 1994, *A. C. Sanders 15893* (UCR & to be distributed)

Previous knowledge. Native to Europe, previously introduced into Australia.

Significance. First records for California. Not reported anywhere in North America by R. C. Rollins (*The Cruciferae of Continental North America*, 1993).

This species will key to *Brassica juncea* (L.) Czernov in the *Brassica* treatment in *The Jepson Manual* (R. C. Rollins, in, J. C. Hickman, ed., 1993). It differs from *B. juncea* in that the leaves, especially the upper, are more deeply and consistently lobed; the beak of the fruit is shorter (3–4 mm versus 6–7 mm); the fruits have a strongly "beaded" appearance caused by bulges created by the seeds; and the flowers are smaller (sepals only 3–4 mm versus 5–6 mm). It is also similar to *B. elongata* Ehrh., which has been introduced into Nevada, but differs in that the fruit is not stipitate and the infloresence is much less highly branched. *B. elongata* looks like a tumbleweed, such as *Sisymbrium altissimum*, whereas *B. fruticulosa* has longer, little-branched, racemose, inflorescence branches.

Brassica fruticulosa is apparently well established along the south foot of the San Gabriel and San Bernardino Mountains and in adjacent interior valleys to the south.